

for each radial the distance from the antenna site to the +17 dBu point of field strength using procedures of §§ 80.765 and 80.767.

(c) Plot on a suitable map each point of +17 dBu field strength for all radials and draw the contour by connecting the adjacent points by a smooth curve.

§ 80.773 Ratio of desired to undesired signal strengths.

Where a frequency is shared the ratio of desired to undesired signal strengths must be at least 12 dB within the service area of a station.

Subpart Q—Compulsory Radiotelegraph Installations for Vessels 1600 Gross Tons

STATIONS ON SHIPBOARD

§ 80.801 Applicability.

The radiotelegraph requirements of Part II of Title III of the Communications Act apply to all passenger ships irrespective of size and cargo ships of 1600 gross tons and upward. The Safety Convention applies to such ships on international voyages. These ships are required to carry a radiotelegraph installation complying with this subpart.

§ 80.802 Inspection of station.

(a) Every ship of the United States subject to Part II of Title III of the Communications Act or the radio provisions of the Safety Convention must have the required equipment inspected at least once every 12 months. If the ship is in compliance with the requirements of the Safety Convention, a Safety Certificate will be issued; if in compliance with the Communications Act, the license will be endorsed accordingly.

(1) The effective date of ship safety certificates is the date the station is found to be in compliance or not later than one business day later.

(2) At inspection, the minimum field strength capability of the main installation and reserve installation when connected to the main antenna may be shown by the licensee by one of the following methods:

(i) Producing a record of communications on 500 kHz over a minimum distance of 370 kilometers (200 nautical

miles) for the main installation and 185 kilometers (100 nautical miles) for the reserve installation which demonstrates the transmission and reception of clearly perceptible signals from ship to ship by day and under normal conditions and circumstances, or

(ii) Provide documentation by a professional engineer, or a person holding a first or second class radiotelegraph operator's certificate, or a general radiotelephone operator license, that the installation produces at 1.85 kilometers (one nautical mile) a minimum field strength of thirty (30) millivolts per meter for the main installation and ten (10) millivolts per meter for the reserve installation. The licensee shall provide, at a minimum, the name and license number of the individual making the measurements or record of communications.

(b) Certificates issued in accordance with the Safety Convention must be posted in a prominent and accessible place in the ship.

[51 FR 31213, Sept. 2, 1986, as amended at 57 FR 26779, June 16, 1992]

§ 80.804 Radio station.

The required radio station must comply with the provisions of this subpart in addition to all other applicable requirements of this part. The radio station consists of a radiotelegraph station and a ship radar station. The radiotelegraph station comprises a main and a reserve radiotelegraph installation, electrically separate and electrically independent of each other except as otherwise provided in paragraph (b) of § 80.805, a radiotelephone installation and such other equipment as may be necessary for the proper operation of these installations. The ship radar station comprises a radar installation and such other equipment and facilities as may be necessary for its proper operation.

§ 80.805 Radio installations.

(a) The main radiotelegraph installation includes a main transmitter, a main receiver, a main power supply, a main antenna system and a 2182 kHz radiotelephone distress frequency watch receiver.

(b) The reserve radiotelegraph installation includes a reserve transmitter, a

reserve receiver, a reserve power supply, emergency electric lights and reserve antenna system: except that:

(1) In installations on cargo ships of 300 gross tons and upwards but less than 1,600 gross tons, and in installations on cargo ships of 1,600 gross tons and upwards installed prior to November 19, 1952, if the main transmitter complies with all the requirements for the reserve transmitter, the latter may be omitted.

(2) A cargo ship the keel of which was laid prior to June 1, 1954, may either be equipped with a reserve antenna or provided a spare antenna consisting of a single-wire transmitting antenna (including suitable insulators) completely assembled for immediate installation.

(c) The medium frequency radiotelephone installation includes a radiotelephone transmitter, a radiotelephone receiver and an appropriate antenna system.

§ 80.806 Requirements of main installation.

All main radiotelegraph installations must meet the following requirements:

(a) The main antenna must be installed and protected to ensure proper operation of the station. Effective October 14, 1986, the main antenna energized by the main transmitter on the frequency 500 kHz must produce at one nautical mile a minimum field strength of thirty (30) millivolts per meter. If the main antenna is suspended between masts or other supports liable to whipping, a safety link must be installed which, under heavy stress, will reduce breakage of the antenna, the halyards, or any other antenna-supporting elements.

(b) The main transmitter must be capable of meeting the requirements of § 80.253.

(c) The main receiver must efficiently receive A1A and A2A emission on all frequencies within the bands 100–200 kHz and 405–535 kHz. It must have headphones capable of effective operation. The main receiver must have sufficient sensitivity to effectively operate headphones or a loudspeaker when the receiver input is 50 microvolts.

(d) The main power supply must simultaneously (1) energize the main

transmitter at its required antenna power, and the main receiver, (2) charge at any required rate all batteries forming part of the radiotelegraph station, and (3) charge the main power supply for this purpose at all times including times of inspection. Under this load condition the voltage of the main power supply at the radio room terminals must not deviate from its rated value by more than 10 percent on vessels completed on or after July 1, 1941, nor by more than 15 percent on vessels completed before that date. While at sea, batteries forming part of the main installation must be fully charged daily.

(e) To measure voltage(s) of the main power supply at its radio room terminals, voltmeter(s) must be permanently installed in the radiotelegraph operating room.

(f) The main installation must be provided with a device permitting changeover from transmission to reception and vice versa without manual switching.

(g) The main installation must be capable of being quickly connected with and tuned to the main antenna and the reserve antenna if one is installed.

§ 80.807 Requirements of radiotelephone installation.

All radiotelephone installations in radiotelegraph equipped vessels must meet the following conditions.

(a) The radiotelephone transmitter must be capable of transmission of A3E or H3E emission on 2182 kHz and must be capable of transmitting clearly perceptible signals from ship to ship during daytime, under normal conditions over a range of 150 nautical miles when used with an antenna system in accordance with paragraph (c) of this section. The transmitter must:

(1) Have a duty cycle which allows for transmission of the radiotelephone alarm signal described in § 80.221.

(2) Provide 25 watts carrier power for A3E emission or 60 watts peak power on H3E emission into an artificial antenna consisting of 10 ohms resistance and 200 picofarads capacitance or 50 ohms nominal impedance to demonstrate compliance with the 150 nautical mile range requirement.